

# FIRE RETARDANT PAINT SYSTEMS

Teknos FR Facade  
Teknos FR Panel



New opportunities with Teknos' fire-retardant paint systems

# TEKNOS FR FAÇADE AND TEKNOS FR PANEL

Teknos FR Façade for exterior and interior opaque woodwork; and Teknos FR Panel for colourless and opaque non-weathered woodwork are fire-retardant paint systems.

These product systems allow a unique opportunity for wood to be used where this has not previously been possible for fire safety reasons. Teknos FR Façade as well as Teknos FR Panel provides architectural freedom and allows wood to be used in built-up areas and on tall buildings.

Teknos FR Façade – the industrial paint system for exterior and interior use consists of: TEKNOSAFE 2407 Fire Retardant Paint, an intermediate treatment of NORDICA EKO 3330 and an on site application of one layer of NORDICA EKO HOUSE PAINT.

## **TEKNOS FR FAÇADE HOLDS THE BELOW B-S1,D0 CLASSIFICATION ACCORDING TO EN 13501-1 FOR THE FOLLOWING TIMBER FAÇADE SYSTEMS:**

- 19 mm planed face spruce with 350 g/m<sup>2</sup> TEKNOSAFE 2407 and up to 150 g/m<sup>2</sup> NORDICA EKO 3330
- 19 to 57 mm extended application classification on sawn face spruce with 350 g/m<sup>2</sup> TEKNOSAFE 2407 and up to 150 g/m<sup>2</sup> NORDICA EKO 3330
- 19 mm sawn face spruce with TEKNOL AQUA 1410 + 350 g/m<sup>2</sup> TEKNOSAFE 2407 and up to 150 g/m<sup>2</sup> NORDICA EKO 3330
- Classified EXT for outside use according to NT Fire 054 (CEN / TS 15912 / EN 16755)
- Performance requirement according to SP Fire 105

## **FIRE-RESISTANT CLASSIFICATION OF TEKNOS FR FAÇADE:**

- B-s1,d0 for surfaces in accordance with EN 13501-1
- K110 and K210 for claddings in accordance with EN13501-2

Teknos FR Panel – the industrial paint system for non-weathered surfaces consists of: TEKNOSAFE 2467 Fire Retardant Paint, or a system approach (service life DRF INT1 and INT2) consisting of: TEKNOSAFE 2467 Fire Retardant paint and one layer of TEKNOCLEAR AQUA 1331-01 (ID 2560953)

## **TEKNOS FR PANEL CURRENTLY HOLDS B-S1,D0 CLASSIFICATION FOR THE FOLLOWING TYPES OF TIMBER CLADDING AND PANEL SYSTEMS:**

- 200 g/m<sup>2</sup> TEKNOSAFE 2467
- 200 g/m<sup>2</sup> TEKNOSAFE 2467 with up to 100 g/m<sup>2</sup> TEKNOCLEAR AQUA 1331-01 (ID 2560953)

Please note, the classification reports cover TEKNOSAFE 2467 and TEKNOSAFE 2467 with TEKNOCLEAR AQUA 1331-01 (ID 2560953), applied on any wood based substrate of Class D-s2,d0, with a density equal to or greater than 338 kg/m<sup>3</sup> and a thickness of at least 8.0 mm.

## **FIRE-RESISTANT CLASSIFICATION OF TEKNOS FR PANEL:**

- B-s1,d0 for surfaces in accordance with EN 13501-1

## **SURFACE QUALITY AND APPEARANCE**

To achieve the quality, also in terms of fire-resistance and appearance of the surface treated with TEKNOSAFE, technical guidelines stated in the Technical Datasheets must be followed.

One quality parameter using TEKNOSAFE compared to the traditional fire impregnated timber is that TEKNOSAFE 2407 does not release salts to the surface of the coated timber in the presence of rain and/or high ambient humidity.

## **WHAT HAPPENS DURING A FIRE**

In the event of a fire, the paint swells to form a durable, protective foam

## Euroclasses and the target safety level

Euro-class	Target safety level
A1	No contribution to fire even under fully developed fire conditions
A2	Only negligible contribution to fire even under fully developed fire conditions; no spread of fire from the area of the primary fire in the fire development phase
B	In the fire development phase, no spread of fire from the area of the primary fire and very limited contribution to the fire
C	Under the conditions of a fire in the development phase, very limited spread of fire and limited energy release and ignitability
D	Under the conditions of a fire in the development phase, limited spread of fire and acceptable energy release and ignitability
E	In the case of a very small fire (match flame) acceptable reaction to fire (ignitability, flame spread)
F	No requirements concerning the reaction to fire

## Additional assessment classes for smoke development and burning droplets / particles

Smoke development	s3 (there are no restrictions regarding smoke development) s2 (the fully released amount of smoke, and the rise in smoke development are restricted) s1 (sticter criteria than for s2 must be fulfilled)
Burning droplets / particles	d2 (there are no restrictions) d1 (burning droplets not longer than the defined time) d0 (dripping fire debris is not permitted)



**THE PROTECTIVE CHARCOAL LAYER.**

layer, creating an insulating effect which prevents flammable gasses from being released from the wood.

If the fire lasts, the upper part of the wood substrate turns to charcoal, but without igniting, and as a result of these properties, wood treated with TEKNOSAFE 2407 is also able to protect underlying materials from fire, and is approved for classes  $k_1,10$  and  $k_2,10$ .

### MANUFACTURER'S PRODUCTION PROCESS

For the manufacturer of fire-retardant timber products where TEKNOSAFE is applied as part of an industrial process, a required amount (see Classification specification) of TEKNOSAFE is applied under carefully controlled conditions. After application, the fire retardant paint is dried – either conventional or forced by utilizing a drying tunnel.

The intermediate coat or topcoat is then applied – and again in a controllable system where the applied amount (see Classification specification) can be measured. After final drying the fire protected timber product is checked and labelled prior to dispatch and delivery to the construction site.

### INSTALLATION AT THE CONSTRUCTION SITE

Follow the manufacturer's guidelines for the various timber and board products. Galvanized nails should be used.



**"TREET" IN BERGEN, NORWAY, THE WORLD'S TALLEST WOODEN HOUSE – 52 METERS HIGH AND 14 STOREYS. TEKNOS HAS SUPPLIED TEKNOS FR FAÇADE AND TEKNOS FR PANEL.**

For further and more detailed information we recommend to check "Technical guideline for Europe" – "Fire safety in Timber Buildings".

### CERTIFICATION / QUALITY ASSURANCE

For timber products, structural timbers and board materials, the EU has introduced Product Standards, in accordance with which all timber manufacturers have to document their own products before they can be sold within the European market.

Fire-retardant wood based products must, at the manufacturers site be certified by a "Notified Body" who issues a "Certificate of Constancy of Performance" following a prior inspection of the manufacturer's production facilities and documentation setup. The Product Standard requires that the manufacturer have a quality control system in operation. All products treated with fire-retardant products from Teknos are adapted to the Construction Product Regulation no. 305/2011 and can consequently be CE-marked.

### CONTACT US

A phone-call to Teknos is a quick and efficient way of getting useful advice for anyone considering using Teknos FR Façade, Teknos FR Panel, or any other Teknos products within our extensive range. Our technical customer service is always on hand to provide you with support as part of the work in developing your optimal surface coating solution and application system. For further information, visit our website at [www.teknos.com](http://www.teknos.com)

# WE MAKE THE WORLD LAST LONGER

Teknos is a global coatings company with operations in more than 20 countries in Europe, Asia, and the USA. The company employs approximately 1,800 people, and the net sales for 2018 was EUR 408.5 million. Teknos is one of the leading suppliers of industrial coatings with a strong position in retail and architectural coatings.

Teknos wants to make the world last longer by providing smart, technically advanced paint and coating solutions to protect and prolong. Teknos always works in close cooperation with its customers. Teknos was established in 1948 and is one of Finland's largest family-owned businesses. For further information, visit [www.teknos.com](http://www.teknos.com).